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Cap 4

ANNOUNCER'S OPENING AND CLOSING
PART FOR TIMELY FARM TOPICS #37-a

OPENING

ANNOUNCER (LIVE): And now by transcription...from the United States Department of Agriculture...we learn how farm science helps to keep injurious insects under control. Cottony cushion scale...woolly apple aphids...the Oriental fruit moth. These and many others are kept in check by beneficial insects imported from all over the world.

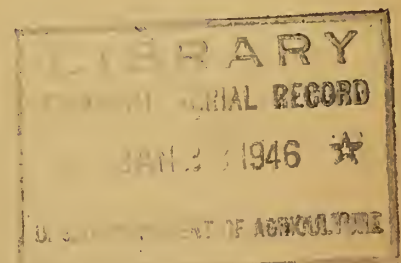
Listen to the story -- as told by Ernie Moore and Duke DuMars, of the United States Department of Agriculture.

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CLOSING

ANNOUNCER (LIVE): You've heard Ernie Moore and Duke DuMars, of the United States Department of Agriculture, in a report on control of injurious insects. This is Number 17 in a series from the U.S.D.A., entitled "How Farm Science Serves the Nation."

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(Farm Science Serves the Nation No. 17)

NATURAL CONTROL OF INJURIOUS INSECTS

Recorded Wednesday, June 20, 1945, by Ernest Moore and M. L. DuMars, Office of Information, U. S. Department of Agriculture. Time, without announcer's parts, five minutes and 55 seconds.

TRANSCRIPTION

ERNIE MOORE: Today we're going to tell how science, working with nature, helps to keep injurious insects from eating us out of house and home. Duke, you were going to do a little research on insects. Did you find how long they've been living on the earth?

DUKE DUMARS: According to the entomologists -- around 50 million years.

MOORE: And the human race?

DUMARS: Only half a million years.

MOORE: Not very long -- comparatively speaking.

DUMARS: No wonder the insects know their way around. They've had time to get used to the place.

MOORE: They certainly have learned to adapt themselves. The codling moth, for example, has learned to live very comfortably on apples and other fruits. The boll weevil -- "jus' a-lookin' foh a home" -- settled on the cotton plants.

DUMARS: Termites found they could live on wood, and the clothes moth on wool.

MOORE: Other insects, like the cattle grub, chose to live on animals. Some, I am sorry to say, would much prefer to live on man. In fact, the situation might be pretty alarming if it weren't for one thing.

DUMARS: I know just what you mean.

"Great fleas have little fleas upon their backs to bite 'em,
And little fleas have lesser fleas, and so ad infinitum."

MOORE: That's just what I mean. Every injurious insect has at least one insect enemy. Some have 30 or 40. And these natural enemies are known as "predators" and "parasites." I suppose the best known of the predators is the ladybird beetle of the famous nursery rhyme.

DUMARS: Her house was on fire -- and she was cautioned to fly home, quick!

MOORE: To save her children. They're very important in nature's scheme of insect control. Do you know how a predatory insect attacks its prey?

DUMARS: Why yes -- about the same way a cat goes after a mouse.

MOORE: That's right. And before the predatory insect matures, it may kill off large numbers of its victims. The parasites work in a different way. They develop on or in the body of another insect, called the host, and eventually kill the host.

DUMARS: There's gratitude for you!

MOORE: The gratitude is on the part of the farmer -- whose crops are saved. Now Duke, to show how these beneficial insects do their work, let's choose one predator and one parasite, and tell how they do the job assigned to them by nature.

DUMARS: You mean by nature and the entomologists.

MOORE: Yes. Which one of the predators shall we talk about?

DUMARS: The ladybird or "vedalia" beetle -- from Australia.

MOORE: All right.

DUMARS: Didn't it save the orange trees in California?

MOORE: It certainly did.

DUMARS: Wasn't it the first beneficial insect to be put to work -- by man -- against an injurious insect?

MOORE: First in this country anyway. And the results were spectacular to say the least. About 1868, the insect known as "cottony cushion scale" got started in the orange groves of California and soon spread all over the State. By 1890 the scale had injured hundreds of thousands of trees. It looked as if the whole industry would be wiped out.

DUMARS: Then came the beetle.

MOORE: Well first came the entomologists. And they set out to find the native home of the cottony cushion scale, and likewise its natural enemies. Albert Koebele, an entomologist sent out by the Department of Agriculture, traced the scale to Australia and New Zealand. But the strange thing was -- although the insect did a great deal of damage in New Zealand, it caused hardly any trouble at all in Australia.

DUMARS: Which meant that in Australia its natural enemies were on the job.

MOORE: In Australia the scale was held in check by the vedalia beetle. So large numbers of the beetle were shipped to California, around 140 survived the trip, and these were turned loose in the orange groves. The beetles increased at a great rate. Within a year and a half they had the situation well in hand, and the orange groves were saved from the cottony cushion scale.

DUMARS: If there should be a small outbreak, I suppose they'd just turn loose a colony of vedalia beetles?

MOORE: That's right -- but the beetles usually appear on the scene of their own accord. Now let's leave the predators and take up the parasites. One of the best known is the wasp that feeds on the woolly apple aphid. Another beneficial parasite is the one that works on the Oriental fruit moth. Still another -- the wasp that keeps the citrus blackfly under control.

DUMARS: Let's take that wasp.

MOORE: Okay.

DUMARS: Eretmocerus serius Silvestri. Brought over from Asia.

MOORE: By Mr. Clausen,* of the Bureau of Entomology and Plant Quarantine. The blackfly was discovered in Jamaica in 1913, and soon became the scourge of the citrus growers in Cuba, other Islands of the West Indies, and parts of Central America.

DUMARS: It's a wonder it didn't get in to Florida and the Gulf States.

MOORE: It was headed in that direction all right, when the Governments of Cuba and the United States decided to get the pest under control before it spread any farther. In 1928 Mr. Clausen was sent to the Far East to bring back some of its natural enemies. He was telling me just the other day how he set out from Cuba for Singapore, with lemon and lime seedlings (in Wardian cases), heavily infested with citrus blackfly. When the ship docked at Singapore the seedlings were unloaded, and Mr. Clausen went out into the fields and gardens in search of the parasite wasps. When he'd collected all he needed he had the lemon and lime seedlings loaded on another ship and sailed back to Cuba.

DUMARS: I wonder why he took seedlings from Cuba. Couldn't he have gotten them in Singapore?

MOORE: Yes, but he didn't want to run the risk of getting plants infected with citrus canker.

DUMARS: (Never thought of that.) Did everything go all right?

MOORE: Yes -- as Mr. Clausen said, "the parasites were perfectly at home and had a nice trip." By the time he returned to Cuba he had a fine collection to let loose in the citrus groves. As a result of this work, they've kept the citrus blackfly under control -- and greatly reduced the danger of its getting established in the United States.

DUMARS: Good example, I'd say, of preventive control.

MOORE: Certainly is. There's just one thing Mr. Clausen regrets -- that he couldn't have done his insect-hunting in these days of air transportation. After the war, he says, the same job that took him nearly six months can be done in a couple of weeks or so.

DUMARS: Then they expect to keep on with the work of importing beneficial insects.

* Curtis P. Clausen, Senior Entomologist, in charge, Division of Foreign Parasitic Introduction, Bureau of Entomology and Plant Quarantine.

MOORE: Yes, when the war is over that job will go right on. They've already imported -- during the past fifty years -- many different species of these useful insects, and about 100 species are now established in the business of keeping injurious insects under control. And not only in this country. The vedalia beetle, for instance, has been distributed to more than fifty countries, since it was first brought to California in 1889. So we have another example of how farm science serves the Nation and the world.

END OF TRANSCRIPTION

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